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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BLEVINS, JERRY M

ART UNIT	PAPER NUMBER
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2883

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/801,133

Applicant(s)

SATO ET AL.

Examiner

Jerry Martin Blevins

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☒ Claim(s) 1-16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/16/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

Claims 1-16 are objected to because of the following informalities:

Independent claim 1 is to an optical fiber comprising an optical fiber. Dependent claims 2-4 are to an optical fiber module according to claim 1. It is apparent to the examiner that claim 1 should include the omitted word "module."

Dependent claims 2-4 are objected to as depending on an objected base claim. Claims 2-4 also contain the incorrect phraseology, "a optical fiber" as opposed to the correct phrase "an optical fiber."

Independent claims 5 and 6 refer to "the holding member" in the fourth step, although there is no antecedent basis for a holding member in these claims. It is apparent to the examiner that "the holding member" refers to the substrates claimed in the first step of these claims.

Independent claims 5-8, third step, are to an application of pressure in the direction almost vertical to the bonded surface of the glass substrates. The terminology, "almost" excludes the possibility that the pressure be applied in an exact vertical direction. However, the applicants' drawings show an application of a pressure in an exact vertical direction. The examiner suggests that the word "almost" be replaced with the word "approximately," which includes the possibility that the pressure is applied either exactly vertical or slightly off vertical.

Dependent claims 9,10; 11,12; 13,14; and 15,16 are objected to as depending on objected base claims 5, 6, 7, and 8, respectively.

Appropriate correction is required.

Allowable Subject Matter

Claims 1-16 are allowable over the prior art and would be allowed if rewritten to overcome the above claim objections.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding independent claim 1, the closest prior art reference, US Patent to Streifer et al, number 4,862,802, teaches an optical fiber module (Figure 2) comprising: an optical fiber (25a-e) which has a taper form shaped elliptical in the cross section of one end face of a core and cladding and changed gradually to be circular as separating away from the end face (column 3, lines 23-29); and a holding member (substrate 33) which holds the optical fiber in the predetermined length from the end face or the whole body from the side of the optical fiber. Streifer does not teach that the holding member has a coefficient of thermal expansion approximately equal to the value of a coefficient of thermal expansion of the cladding material of the optical fiber. Furthermore, Streifer does not teach a sealing material, which fills a gap between the optical fiber, and the holding material. Streifer, either alone or in combination with the other prior art, does not disclose or render obvious the claim of a holding member with the particular thermal expansion coefficient limitation of claim 1 or the claim of a sealing material between the fiber and the holding material.

Dependent claims 2-4 are allowable based on their dependence on allowable base claim 1.

Regarding independent claim 5, the closest prior art reference, US Patent to Blijleven, number 5,216,741, teaches method of manufacturing an optical fiber module (column 4 line 54 – column 6, line 22) comprising a step of placing an optical fiber (Figure 1, element 9) between a substrate (glass strip 1), a step of heating the substrate and the fiber placed between the substrate (column 5, line 65), a step of applying a predetermined pressure in the direction approximately vertical to the bonded surface of the glass substrate while maintaining the temperature (Figure 2, arrow B and column 5, lines 64-67), a step of filling adhesive material in a gap between the optical fiber and the substrate (column 5, lines 7-15), and a step of polishing the end face of the optical fiber together with the substrate holding the optical fiber (column 6, lines 15-22). Blijleven does not teach that the substrate has a coefficient of thermal expansion approximately equal to a coefficient of thermal expansion of a cladding material of the optical fiber. Blijleven also does not teach that the heating process heats the substrate and the optical fiber to a temperature higher than a glass transition temperature of a core material and a glass transition temperature of a cladding material of the optical fiber. Furthermore, Blijleven does not teach that step of bonding the fiber and substrate. Blijleven, either alone or in combination with the other prior art, does not disclose or render obvious the specific limitations of steps 1, 2, and 4.

Regarding independent claim 6, Blijleven teaches all the above steps as set forth in the analysis of claim 5. In addition to not teaching the above omitted steps as set forth in the analysis of claim 5, Blijleven also does not teach the step of inserting a spacer member in at least one location between the substrates. Blijleven, either alone

or in combination with the other prior art, does not disclose or render obvious the specific limitations of steps 1, 2, and 4.

Regarding independent claim 7, Blijleven teaches all the above steps as set forth in the analysis of claim 5. In addition to not teaching the above omitted steps as set forth in the analysis of claim 5, Blijleven also does not teach the step of inserting a low fusion point glass material between the substrates. Blijleven, either alone or in combination with the other prior art, does not disclose or render obvious the specific limitations of steps 1 and 2.

Regarding independent claim 8, Blijleven teaches all the above steps as set forth in the analysis of claim 5. In addition to not teaching the above omitted steps as set forth in the analysis of claim 5, Blijleven also does not teach the step of inserting a spacer member and a low fusion point glass material between the substrates. Blijleven, either alone or in combination with the other prior art, does not disclose or render obvious the specific limitations of steps 1 and 2.

Regarding dependent claims 9, 11, 13, and 15, the closest prior art reference, US Pre Grant Publication to Fuse et al, teaches an image display unit comprising fiber laser apparatuses which output R, G, and B lights, special modulation elements which spatially modulate the R, G, and B lights, a synthesizing means which synthesizes the R, G, and B lights spatially modulated by the spatial modulation elements, and an optical element which forms the image of the output light of the synthesizing means at a predetermined position (all, Fuse claim 7). Fuse does not teach that at least one of the fiber laser apparatuses has an optical fiber module manufactured by the methods of

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claims 5-8, respectively. Specifically, the structure of the fiber laser apparatuses taught by Fuse do not contain the structure implied by any of the methods 5-8. Fuse, either alone or in combination with the other prior art, does not disclose or render obvious the structure implied by the process limitations as set forth in claims 5-8.

Regarding dependent claims 10, 12, 14, and 16, Fuse teaches an image display unit comprising fiber laser apparatuses which output R, G, and B lights, a white light synthesizing means which collects the R, G, and B lights as one light and makes it a white light when viewed macroscopically, a spatial modulation element which spatially modulates the output light of the white light synthesizing means, and an optical element which forms the image of the light modulated spatially by the spatial modulation element at a predetermined distance (all, Fuse claim 8). Fuse does not teach that at least one of the fiber laser apparatuses has an optical fiber module manufactured by the methods of claims 5-8, respectively. Specifically, the structure of the fiber laser apparatuses taught by Fuse do not contain the structure implied by any of the methods 5-8. Fuse, either alone or in combination with the other prior art, does not disclose or render obvious the structure implied by the process limitations as set forth in claims 5-8.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

This application is in condition for allowance except for the following formal matters: the above mentioned claim objections.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

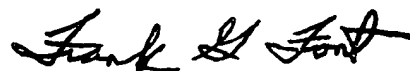
A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Martin Blevins whose telephone number is 571-272-8581. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached at 571-272-2415. The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMB



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